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| EXAMINER | |
|---|---|
| BHATTACHARJEE, GOPA | |

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| 2663 | |

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/020,672 | LOHTIA ET AL. | |
| | Examiner | Art Unit | |
| | Gopa Bhattacharjee | 2681 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *14 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: In the specification, page 3-line 31. Shaded vertical window area 204 and 205 are mentioned but the Figure does not portray the shaded regions, inconsistency between the Figure and specification.

### *Drawings*

2. The drawings are objected to because the drawing of Figure 2b and the write up in the specification does not match. Drawing shows the ordinate 100 – Y% of Data power and the description shows (100-Y)% in page 3 lines 35. Drawing shows the abscissa 100 %– X of Voice power and the description shows (100-X)% in page 3 lines 35. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rubin et al. (U.S. Patent No. 6,567,428) hereinafter referred as Rubin in view of Kumaran et al. (U.S. Patent No. 6,775,233) hereinafter referred as Kumaran.

- Regarding claim 1, Rubin discloses a *system* for allocating radio spectral resources to data and voice traffic in a communication system that support shared frequency transmission ( Rubin disclose a *system* shown in Figure 2 for generating variable size voice and signaling data packets which are multiplexed as voice and signaling packets into a CDMA traffic channel). Rubin further discloses means for receiving data and voice traffic (column 4, line 50-55 shows a multiplexer receives the voice packets and the signaling packets and combine them to form a traffic frame). Rubin further discloses means for dynamically allocating the spectral resources to data and voice traffic based on the present need for data traffic and voice traffic (Column 2 lines 50-56 and Column 3, lines 5-10, the finite bandwidth constraints of the communication channel is taken care of by dynamically adjusting the parameters of the encoding/decoding algorithms. The system consists of a source for generating a series of variable size voice packets in accordance with the amount of the voice information. And a source for generating a series of variable size signaling packets in accordance with the amount of the

signaling information). Rubin discloses means, responsive to said dynamically allocating, for transmitting data and voice traffic as RF transmission out to the communication network (Column 6, lines 10-15). However, Rubin fails to disclose that the resource allocation to data and voice traffic is based on cost factor analysis. Kumaran discloses system resource division based on cost factors of the users (Abstract; and Column 2, lines 20-25). Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to increase the revenue, reduce financial loss to the provider.

- Regarding claim 2, Rubin discloses the system for dynamically allocating voice and data traffic, to maximize the voice quality (Column 2, line 50 provides a system for dynamically adjusting parameters of the algorithms). Rubin fails to disclose further the allocated percentage for said voice and data traffic utilizing a cost factor analysis, which maximizes revenue. Kumaran discloses in the abstract and in column 2, lines 20-25 of resource allocation based on cost factor of the users. Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 3, Rubin discloses a means for monitoring the spectral resources allocated to voice and data traffic (Figure 2 display a controller block 204. The controller is coupled to the signal encoder the output of which feed to a multiplexer which multiplexes voice and data).
Rubin discloses a data window and voice window bordering, wherein the size of each window is adjustable (Figure 4 Traffic Frames show, a varying amount of voice and data traffic in each frame, which clearly indicates that data traffic and voice traffic window is adjustable up to a dynamic threshold value based on data and voice needs. Rubin discloses in column 6, line 15

the allocation of voice and data based on the delay tolerance parameter of the voice signal which is 20 m seconds). Rubin further discloses sliding of the data and voice window to accommodate a request for additional data and voice respectively (Figure 4). Rubin fails to disclose further that the sliding window of the spectral allocation expands up to a threshold value. Kumaran discloses in the column 2, lines 20-25 of resource allocation based on cost factor. Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran.
One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 4, Rubin discloses the means for calculating the dynamic threshold value as desired need for both the traffic and signaling need in (Figure 4 and column 6 line 15. Rubin discloses in column 6, line 15 the allocation of voice and data based on the delay tolerance parameter of the voice signal, which is 20 m seconds). Each of the traffic frames includes voice data and signal data and a decision is made in every 20 ms as to the size of voice packet. Different traffic frame sizes can be implemented in each 20 ms traffic frames (column 5, lines 20-25). Rubin fails to disclose further that the means of calculating the dynamic threshold value based on cost value. Kumaran discloses in the column 2, lines 20-25 of resource allocation based on cost factor. Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 5, Rubin discloses responsive to a total need of said data traffic and said voice traffic for overlapping said windows; (column 6, lines 30-35). Rubin fails to disclose further overlapping windows is set up according to the said dynamic threshold value; and allocating a percentage of

spectral resources within said overlapping windows to either voice or data depending on a predetermined priority for assigning the overlapped percentage. Kumaran discloses in the column 2, lines 20-25 of resource allocation based on cost factor. Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 6, Rubin discloses, receiving an input of said size of each window;(Column 4, line 55). Rubin fails to disclose further the receiving is based upon cost factor associated with said data traffic and voice traffic as an input to the processing means. Kumaran discloses resource allocation based on cost factor in Column 2, lines 20-25. Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 7, Rubin discloses a traffic frame of fixed width as shown in Figure 4, also (Column 6, lines 10-15). Figure 4 discloses 4 consecutive traffic frames consisting of voice and signaling packets. The voice and signaling window is variable wherein the sum of said frame durations is fixed.

- Regarding Claim 8, Rubin discloses that the said multiplexing of the voice and data is for CDMA (Column 3, line 60) network.

- Regarding claim 9, Rubin discloses in (Column 4, lines 45-50) a processing means that includes a processor, the Controller 204, for dynamically allocating the voice and signaling packets sharing the radio spectrum.

- Regarding claim 10, Rubin discloses a receiving means for generating said data and voice traffic in Figure 2. Figure 2 displays a

receiving means consisting of controller 214, signal encoder 205, voice encoder 201 and multiplexer 202 in the transmit path.

- Regarding claim 11, Rubin discloses a *method* for allocating radio spectral resources to data and voice traffic in a communication system that support shared frequency transmission ( Rubin disclose a *method* shown in Figure 2 for generating variable size voice and signaling data packets which are multiplexed as voice and signaling packets into a CDMA traffic channel). Rubin further discloses methods for receiving data and voice traffic (column 4, line 50-55 shows a multiplexer receives the voice packets and the signaling packets and combine them to form a traffic frame). Rubin further discloses methods for dynamically allocating the spectral resources to data and voice traffic based on the present need for data traffic and voice traffic (Column 2 lines 50-56 and Column 3, lines 5-10, the finite bandwidth constraints of the communication channel is taken care of by dynamically adjusting the parameters of the encoding/decoding algorithms. The method consists of a source for generating a series of variable size voice packets in accordance with the amount of the voice information. And a source for generating a series of variable size signaling packets in accordance with the amount of the signaling information.) Rubin discloses methods, responsive to said dynamically allocating, for transmitting data and voice traffic as RF transmission out to the communication network (Column 2, lines 50-55). However, Rubin fails to disclose that the resource allocation to data and voice traffic is based on cost factor analysis. Kumaran discloses system resource division based on cost factors of the users (Abstract; and column 2 lines 20-25). Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to increase the revenue, reduce financial loss to the service provider.

- Regarding claim 12, Rubin discloses method for dynamically allocating voice and data traffic to maximize the voice quality (Column 2, line

50 provides a system for dynamically adjusting parameters of the algorithms). Rubin fails to disclose further the allocated step for said voice and data traffic utilizing a cost factor analysis, which maximizes revenue. Kumaran discloses in the abstract and in column 2, lines 20-25 of resource allocation based on cost factor of the users. Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 13, Rubin discloses a method wherein processing step includes monitoring the spectral resources allocated to voice and data traffic (Figure 2 controller block 204. The controller is coupled to the signal encoder the output of which feed to a multiplexer which multiplexes voice and data). Rubin also discloses a data window bordering wherein a size of each window is adjustable. (Figure 4 Traffic Frames show, varying amount of voice and data traffic in each frame, which clearly indicates that data traffic and voice traffic window is adjustable up to a dynamic threshold value based on data and voice needs. Rubin disclosed in column 6, line 15 the allocation of voice and data based on the delay tolerance parameter of the voice signal which is 20 ms). Rubin further disclosed sliding of the data and voice window to accommodate a request for additional data and voice respectively (Figure 4).

- Regarding claim 14, Rubin discloses method for calculating the dynamic threshold value as desired need for both the traffic and signaling need in (Figure 4 and column 6 line, 15. Rubin discloses in column 6, line 15, the allocation of voice and data based on the delay tolerance parameter of the voice signal, which is 20 m seconds). Each of the traffic frames includes voice data and signal data and a decision is made in every 20 ms as to the size of voice packet. Different traffic frame sizes can be implemented in each 20 ms traffic frames (column 5, lines 20-25). Rubin fails to disclose further

that the means of calculating the dynamic threshold value based on cost value. Kumaran discloses in the column 2, lines 20-25 of resource allocation based on cost factor. Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 15, Rubin discloses method responsive to a total need of said data traffic and said voice traffic for overlapping said windows; (column 6 lines 30-35). Rubin fails to disclose further overlapping windows is set up according to the said dynamic threshold value; and allocating a percentage of spectral resources within said overlapping windows to either voice or data depending on a predetermined priority for assigning the overlapped percentage. Kumaran discloses in the column 2, lines 20-25 of resource allocation based on cost factor. Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to maximize the revenue, reduce the cost of the service provider. This claim has similar limitations as claim 5.

- Regarding claim 16, Rubin discloses method, receiving an input of said size of each window; (column 4, line 55). Rubin fails to disclose further the receiving is based upon cost factor associated with said data traffic and voice traffic as an input to the processing means. Kumaran discloses in the column 2, lines 20-25 of resource allocation based on cost factor. Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 17, Rubin discloses a traffic frame of fixed width as shown in Figure 4, also (Column 6, lines 10-15) discloses 4 consecutive traffic

frames consisting of voice and signaling packets. The voice and signaling window is variable wherein the sum of said frame durations is fixed.

- Regarding Claim 18 Rubin discloses that the said multiplexing of the voice and data is for CDMA (column 3 , line 60) network.

- Regarding claim 19, Rubin discloses a receiving step for generating said data and voice traffic in Figure 2. Figure 2 displays a receiving step consisting of controller 214, signal encoder 205, voice encoder 201 and multiplexer 202 in the transmit path.

- Regarding claim 20 Rubin disclose a system which inherently includes a computer readable medium for storing program codes (Column 6, lines 10-15) to carry out the method of allocating spectral resources to data and voice traffic in a communication system that support shared frequency transmission (Rubin disclose a *system* shown in Figure 2 for generating variable size voice and signaling data packets which are multiplexed as voice and signaling packets into a CDMA traffic channel). Rubin further discloses means for receiving data and voice traffic (column 4, line 50-55 shows a multiplexer receives the voice packets and the signaling packets and combine them to form a traffic frame). Rubin further discloses means for dynamically allocating the spectral resources to data and voice traffic based on the present need for data traffic and voice traffic (Column 2 lines 50-56 and Column 3, lines 5-10, the finite bandwidth constraints of the communication channel is taken care of by dynamically adjusting the parameters of the encoding/decoding algorithms. The system consists of a source for generating a series of variable size voice packets in accordance with the amount of the voice information. And a source for generating a series of variable size signaling packets in accordance with the amount of the signaling information). Rubin discloses dynamically assigning spectral resources. However, Rubin fails to disclose that the resource allocation to data and voice traffic is based on cost factor analysis. Kumaran discloses in the abstract and in column 2, lines 20-25 of resource allocation based on cost factor of the

users. Therefore it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran.
One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 21, Rubin discloses a system configured with a computer program for carrying out the method for dynamically allocating voice and data traffic, to maximize the voice quality (Column 2, line 50 provides a system for dynamically adjusting parameters of the algorithms). However, Rubin fails to disclose the allocated percentage for said voice and data traffic utilizing a cost factor analysis that maximizes revenue. Kumaran however discloses in the abstract and in column 2, lines 20-25 of resource allocation based on cost factor of the users.
Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 22, Rubin discloses a system configured with a computer program for carrying out the method for monitoring the spectral resources allocated to voice and data traffic (In Figure 2 the controller block 204. The controller is coupled to the signal encoder the output of which feed to a multiplexer which multiplexes voice and data). Rubin disclosed a data window and voice window bordering wherein a size of each window is adjustable (Figure 4 Traffic Frames show, varying amount of voice and data traffic in each frame, which clearly indicates that data traffic and voice traffic window is adjustable up to a dynamic threshold value based on data and voice needs). Rubin further disclosed sliding of the data and voice window to accommodate a request for additional data and voice respectively (Figure 4). However, Rubin fails to disclose further that the sliding window of the spectral allocation expands up to a threshold value based on cost factor .Kumaran

discloses in the column 2, lines 20-25 of resource allocation based on cost factor. Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 23, Rubin discloses a system configured with a computer program for carrying out the method for the traffic frame in Figure 4 [column 6 line 15] . Rubin discloses calculating the dynamic threshold value as desired need for both the traffic and signaling need in (Figure 4 and column 6, line 15. Rubin disclosed in Column 6, line 15 the allocation of voice and data based on the Delay tolerance parameter of the voice signal, which is 20 m seconds). Each of the traffic frames includes voice data and signal data and a decision is made in every 20 ms as to the size of voice packet. Different traffic frame sizes can be implemented in each 20 ms traffic frames (column 5, lines 20-25). Rubin fails to disclose further that the means of calculating the dynamic threshold value based on cost value.

Kumaran discloses in the column 2, lines 20-25 of resource allocation based on cost factor. Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran. One is motivated as such in order to maximize the revenue, reduce the cost of the service provider

- Regarding claim 24, Rubin discloses allocation of data and voice with variable window. However, Rubin fails to disclose further overlapping windows is set up according to the said dynamic threshold value; and allocating a percentage of spectral resources within said overlapping windows to either voice or data depending on a predetermined priority for assigning the overlapped percentage. Kumaran discloses in the column 2, lines 20-25 of resource allocation based on cost factor.Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by

Kumaran.One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 25, Rubin fails to disclose further the receiving is based upon cost factor. Kumaran discloses in the column 2, lines 20-25 of resource allocation based on cost factor.Therefore, it would have been obvious to a person having ordinary skill at the time of invention to include into Rubin's invention the cost factor based allocation as taught by Kumaran.
One is motivated as such in order to maximize the revenue, reduce the cost of the service provider.

- Regarding claim 26, Rubin discloses method and system for allocating a traffic frame with fixed width of the frame but a variable window for data and voice as shown in Figure 4 also (Column 6, lines 10-15).

- Regarding claim 27, Rubin discloses method and system for CDMA network (column 3, line 60).

**Contact Information**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gopa Bhattacharjee whose telephone number is (571) 272 0778. The examiner can normally be reached on Monday through Friday from 9:00AM to 4:30PM ETS.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272- 3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gopa Bhattacharjee
Patent examiner
Art Unit 2663

RICKY NGO
PRIMARY EXAMINER
10/17/05